

AMENDMENTS TO THE CLAIMS

1. (Original) A method of continuously producing polyalkylbiphenyls, comprising the steps of:

(1) supplying reaction raw materials containing at least biphenyl and an olefin to a fixed-bed flow system reactor wherein the mol ratio of olefin/biphenyl is 0.3 to 3 at the inlet of the reactor and reacting the raw materials in the presence of a solid acid catalyst to obtain a reaction mixture containing monoalkylbiphenyls and dialkylbiphenyls;

(2) separating a fraction containing biphenyl and at least a part of monoalkylbiphenyls from said reaction mixture;

(3) circulating the fraction separated in said step (2) to said reactor such that the ratio by weight of biphenyl to monoalkylbiphenyls is designed to be 0.1 or more and is designed to be less than the solubility of biphenyl to monoalkylbiphenyl at a circulation temperature; and

(4) recovering polyalkylbiphenyls containing at least one of 3,3-dialkylbiphenyl, 3,4'-dialkylbiphenyl, 4,4'-dialkylbiphenyl and 3,5'-dialkylbiphenyl from the reaction mixture through said step (2).

2. (Original) A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the concentration of dialkylbiphenyls in the fraction separated in said step (2) is made to be 15% by mass or less.

3. (Original) A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the amount of

dialkylbiphenyls in the fraction separated in said step (2) is made to be 30% by mass or less of the amount of dialkylbiphenyls produced in said step (1).

4. (New) A method of continuously producing polyalkylbiphenyls according to claim 2, wherein the amount of dialkylbiphenyls in the fraction separated in said step (2) is made to be 30% by mass or less of the amount of dialkylbiphenyls produced in said step (1).

5. (New) A method of continuously producing polyalkylbiphenyls according to claim 4, wherein the biphenyl raw material comprises a dialkylbiphenyl, and the olefin has 2 to 6 carbon atoms.

6. (New) A method of continuously producing polyalkylbiphenyls according to claim 5, wherein the biphenyl raw material is a 3,3'-, 3,4-, 4,4'- or 3,5-dialkylbiphenyl, the olefin is propylene, 1-butene, 2-butene or isobutene and the acid catalyst is silica alumina, and wherein the mol ratio of olefin/biphenyl is 0.5-1.5 at the inlet of the reactor.

7. (New) A method of continuously producing polyalkylbiphenyls according to claim 6, wherein the fraction separated in step 2 contains up to 15 mass percent of dialkylbiphenyl and up to 30 mass percent monoalkylbiphenyl.

8. (New) A method of continuously producing polyalkylbiphenyls according to claim 7, wherein the fraction separated in step 2 contains up to 10 mass percent of dialkylbiphenyl and up to 20 mass percent monoalkylbiphenyl.

9. (New) A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the biphenyl raw material comprises a dialkylbiphenyl, and the olefin has 2 to 6 carbon atoms.

10. (New) A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the biphenyl raw material is a 3,3'-, 3,4-, 4,4'- or 3,5-dialkylbiphenyl, the olefin is propylene, 1-butene, 2-butene or isobutene and the acid catalyst is silica alumina, and wherein the mol ratio of olefin/biphenyl is 0.5-1.5 at the inlet of the reactor.

11. (New) A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the fraction separated in step 2 contains up to 15 mass percent of dialkylbiphenyl and up to 30 mass percent monoalkylbiphenyl.

12. (New) A method of continuously producing polyalkylbiphenyls according to claim 1, wherein the fraction separated in step 2 contains up to 10 mass percent of dialkylbiphenyl and up to 20 mass percent monoalkylbiphenyl.